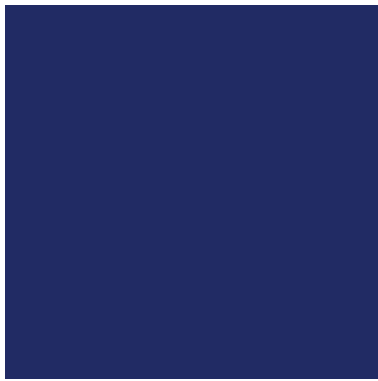




Should I **Rent** or **Purchase** Flame Resistant Clothing?

Strategies for building a safer and more cost-effective protective apparel program

FLAME RESISTANT
CLOTHING

**About Cintas Canada Ltd.:**

Cintas Canada Ltd, with headquarters in Mississauga, Ontario is a subsidiary of Cintas Corporation. Cintas Canada designs, manufactures and implements corporate identity uniform programs and provides entrance mats, restroom cleaning and supplies, and tile and carpet cleaning services to approximately 55,000 businesses in Canada. Cintas is a publicly held company traded over the Nasdaq Global Select Market under the symbol CTAS, and is a component of the Standard & Poor's 500 Index.

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I. Overview

You're responsible for the safety of 50 maintenance electricians and it's time to update your company's flame resistant clothing program. Under federal and provincial health and safety regulations, you have a duty to keep your employees safe, and to make sure any Personal Protective Equipment (PPE) is maintained properly. In fact, the many standards associated with the selection, use, care and maintenance of flame resistant clothing collectively place several responsibilities on the company.¹ They are:

- 1 The garments should properly fit the wearer.
- 2 The garments are inspected prior to each use.
- 3 The garments must be laundered to manufacturer's specification or industry standards.
- 4 The garments must be repaired with like flame resistant (FR) materials.
- 5 The garments must be systematically retired and removed from service.

You know the rules, now what? From the multiple types of garments available to the different brands and sourcing programs, the options can be overwhelming and exhausting— even to the most seasoned safety professional. Before jumping into a program, ask yourself the following questions:

Q: How dirty do my employees get and can they effectively remove the soils at home?

Q: How rough are the employees on their garments?

Q: Including retirement, how much employee turnover did we experience last year?

Q: How many employees gained or lost weight requiring new size garments?

It's critical to note that there's not a "one-size-fits-all" approach to PPE program management. What might work best for a company in the oil and gas industry might not be the same for a company in a manufacturing environment.

So how do you develop a program that works best for your business? First, you need to understand the options available and how those options impact the total cost of ownership (TCO) of your program. In this white paper, we'll walk you through a few basic questions you can ask to help you develop a safer and more cost-effective PPE program.

¹For a full list of applicable standards, please review the "references" section on page 10.



A Little Bit Now Means a Lot Later

In developing your PPE program, we should not lose sight of the principle objectives: To design the **safest** program most **cost-effectively**. By considering the TCO of the program, you can improve safety and save money in the long-term.

The TCO of your garment is largely determined by its cost and its wear life. For example, in a typical FR program, workers are provided one set of a shirt and pant for each working day, with the addition of seasonal outerwear. For everyday work clothing like shirts, pants and coveralls depending upon your specific working environment, you might estimate the average wear life for these garments to be approximately one year. Because seasonal outerwear is worn less frequently, you might estimate the wear life to be as much as three years. Items that will impact a garment's wear life include soil conditions, wear and tear, employee turnover and size changes—all considerations specific to your working environment.

Imagine this scenario:

$$\begin{array}{c} \text{Icon of a shirt and pants} \\ \text{(5 Shirts/5 Pants per employee)} \end{array} \times 50 = \$55 \text{ each piece} \begin{array}{c} \\ \text{(\$1 per week)} \end{array}$$

(Let's say you purchase all of your 50 employees' FR, which includes five shirts and five pants. The cost for each shirt or pant is approximately \$55 or about a \$1 per week.)

Throughout the year, you are required to purchase replacement garments due to staining from heavy soils and damage due to rips and tears. Many companies have found this to increase the overall cost of their program by as much as 30 percent. Following a weight loss challenge, two of the workers drop approximately 20 pounds, requiring them to go down in clothing sizes. This forces you to retire their inventory of garments half way through the year. This doubles the total cost of ownership of the product, as you will need to replace the garments after only half the wear life anticipated. The same holds true for the purchase of new inventory when you replace employees due to retirement or turnover.

Conversely, if you used a managed rental program, you better control your cost as the laundering, repairs and replacements due to employee turnover and size changes are often included without incurring an additional cost.

While this scenario demonstrates the benefit of renting your everyday work clothing, there might be some other situations where purchasing garments (e.g. seasonal outerwear) may be a better solution for your business. Ultimately, you want to keep costs low, but not at the expense of worker safety. Many companies have found that a hybrid program, encompassing both purchase and rental options, creates a safer program while providing the best economic solution.



II. Defining the Total Cost of Ownership

In order to accurately compare the cost of a purchase versus a managed FR program, you need to look at all the costs you will incur throughout the wearable life of the garments. Based on this number, you can calculate your daily or per use cost for the garment, giving you a baseline number to compare against the cost of a managed program.

To help identify the factors that will contribute to the TCO of your program, ask yourself the following three questions:

1 What's the Soil Load?

Industries with particularly heavy soil loads are frequently exposed to high levels of flammable materials, such as fuel, grease and oil. These contaminants make employee uniforms difficult to clean, and using the incorrect cleaning compounds could damage the material. The standards for the laundering of flame resistant clothing require flammable contaminants to be removed from the garments.¹

If employees launder their FR at home, they will be unlikely to remove heavier soils and as a result, many employees might throw away garments that can't be cleaned (or garments they believe can't be cleaned) or worse case, wear garments contaminated with flammable materials. This is also a common situation for many companies that use a local cleaner or laundry facility to clean garments—and will ultimately drive up the costs of your program.

2 How much wear and tear will garments experience?

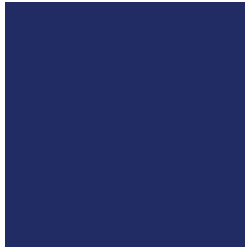
Are workers regularly moving in and out of areas where tearing or rips may happen? Do they work around heavy machinery or tight spaces that could lend to potential snags? Provincial codes require employers to ensure "the equipment, materials and protective devices provided by the employer are maintained in good condition" as cited in the Occupational Health & Safety Act of Ontario². This includes repairing garments with flame resistant thread or repairing holes with the proper FR materials.

Assuming the employee doesn't have accessibility to flame resistant thread, they increase their risk of injury because the use of untreated thread could cause the garment to fail. To eliminate this risk, you replace the garment. Depending on the nature of the industry, the replacement costs can increase the overall cost of the program by as much as 20 percent.

3 What's the average turnover for employees who need to wear FR?

Even if you're in a high-demand industry, you can count on some degree of worker turnover. Whether employees are forced to relocate due to familial responsibilities, retire or just find a better opportunity

²http://www.labour.gov.on.ca/english/hs/pdf/ohsa_guide.pdf



somewhere else, you can typically estimate average worker turnover of 15 to 22 percent³.

While turnover is unavoidable, it's something you need to take into consideration when reviewing the TCO of your program. It's a similar scenario to the previously outlined where workers gain or lose weight and will need to go up or down a size in garments, because it will force you to retire an entire set of garments.

In conclusion, if you purchase your FR, you need to consider a number of factors that will impact the TCO. The soil conditions, wear and tear, weight loss/gain, and turnover all increase the overall cost of your program, on average, by as much as 15 to 20 percent.

III. Weighing the Responsibilities: Managed versus Company-Owned

Once you've completed an assessment that identifies the TCO of your program, the next thing to decide is how FR garments will be laundered. There are a few options:

- 1 Employees will self-laundry and manage their own FR apparel
- 2 Send FR garments to be laundered by a local cleaner
- 3 Engage a uniform service provider to maintain and manage your FR program

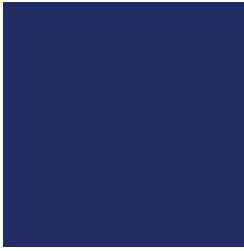
Some businesses require employees to launder their own garments. While it's an option for maintaining garments, many organizations are moving away from this model due to industry standards that establish best practices for laundering and repairing FR clothing in order to maintain the FR integrity of the garments. For example, ASTM F2757, the *Standard Guide for Home Laundering Care and Maintenance of Flame, Thermal and Arc Resistant Clothing*, outlines the proper home laundering methods, including that FR garments should be turned inside out when laundering, washed separately and should not be laundered with fabric softeners or chlorine bleach⁴.

However, even if FR wearers were to diligently follow the steps above and wash FR garments according to the instructions in ASTM F2757, some contaminants simply cannot be removed through home laundering. Most FR wearers don't have at-home water temperatures high enough or detergents strong enough to remove petroleum-based substances that can sometimes stay on FR clothing.

When FR garments are outsourced to a local cleaner that doesn't specialize in PPE laundering, one would have

³<http://www.statcan.gc.ca/pub/11f0027m/2011072/t005-eng.htm>

⁴<http://www.astm.org/Standards/F2757.htm>



to question whether or not the integrity of the FR is maintained. FR garments will be laundered, but very few cleaners provide confirmation of how garments are laundered.

With a managed FR program, you are able to combine the best of both worlds—laundry service combined with garment repairs and replacements. This enables you to ensure the proper water temperatures, water softness and cleaning agents are utilized. Under a managed FR program, weekly route services are used to collect garments, and the clothing is hand inspected, laundered according to industry standards, replaced if necessary and returned. Garments deemed damaged or defective are either repaired or replaced.

Developing a Safer, More Cost-Effective FR Program

Now that you understand the different factors that contribute to the TCO of your FR program, let's go back to our original scenario, wherein you're responsible for outfitting a team of 50 employees in flame-resistant clothing.

Based on an estimated cost of \$550 per year to outfit an employee in five FR shirts and five FR pants, you will spend approximately \$27,500 a year for garments.

As a next step, you should consider the variables listed above and include them in the TCO estimate. For example:

- **Replacements due to size change 6.00%**
- **Replacements due to unrepairable garments 10.00%**
- **Turnover 4.00%**

These factors result in an increase of 20 percent to the initial garment cost or \$5,500 for the year. Now consider the costs to clean the garments:



The estimated cost to clean these items would be approximately \$260 per year per employee, or \$13,000 for 50 employees.

If you look at a managed program with the same scenario, each employee is provided five clean shirts and pants each week at an average cost of \$11.00 per week per employee. The total cost of the program will be



approximately \$28,600 a year as compared to \$46,000 for a purchase and clean program. You no longer have the concern of soil loads, tears, maintenance or turnover. **The result is a safer program at a cost savings of 38 percent.**

In addition to the cost savings, a managed program helps increase your peace of mind. You don't have the headaches of making sure "John" isn't wearing soiled garments from last week, because with the managed program, a uniform service provider picks up soiled garments on a weekly basis to inspect them for tears or damage, and launders the uniforms according to industry standards. Clean garments are delivered directly to your business.

When you look at costs for infrequently used items, such as outerwear, the evaluation plays more favourably toward purchasing garments due to the longer wear life.

IV. Should I Rent or Purchase? That Is the Question

As regulations continue to put the responsibility on employers to implement and maintain PPE programs that limit risk to workers, more businesses and safety professionals increasingly debate the best way to acquire and maintain their employees' FR garments.

As mentioned earlier, there's no one-size-fits-all solution. By looking at some of the different factors that contribute to the total cost of ownership of the FR program along with your options for laundering and maintaining FR garments, you will have a more accurate assessment of the best option for your business.

"Concern for man himself and his safety must always be the chief interest of all technical endeavors."

— Albert Einstein

Whether you decide to use a purchase, rental or hybrid FR program, it's your responsibility as an employer to make sure it's not only cost-effective for your business, but one that limits the risk to the worker and improves the overall safety of your workplace.

Cintas Canada Ltd. Provides a variety of rental and purchase FR apparel programs for industries of all types. For help identifying a solution that work best for your business, visit www.cintas.ca/FRC



Is There Room for Improvement in Your FR Program?

Take the following quiz to find out if you have room for improvement in managing your FR program:

	YES	NO
1. Do all garments properly fit the wearer?	<input type="checkbox"/>	<input type="checkbox"/>
2. Are all FR garments inspected prior to each use?	<input type="checkbox"/>	<input type="checkbox"/>
3. At what temperature are FR garments laundered?*		
4. Is chlorine bleach, oxidizers, fabric softeners or dryer sheets used during the laundry process?	<input type="checkbox"/>	<input type="checkbox"/>
5. Are rips or tears mended using regular thread?**	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you have a plan in place for reviewing and systematically retiring and removing garments from service?	<input type="checkbox"/>	<input type="checkbox"/>

*Typically 50 to 70 degrees Celsius.

** FR garments should be repaired using flame resistant materials.

Pursuant to federal and provincial Occupational Health and Safety legislation an employer bears sole responsibility for selecting the type(s) of personal protective equipment to be used by its employees. All purchasers of FRC garments and/or laundering services from Cintas bear full responsibility for selecting the PPE appropriate for use by their employees. Cintas makes no representation, warranty, or covenant with respect to the flame-resistant qualities of the garments or with respect to the fitness or suitability of the garments for any particular use or purpose. The purchase of any goods or service from Cintas is subject to Cintas' Standard Terms and Conditions and/or any other applicable written contract executed between the purchaser and Cintas relating to such purchase.

References

¹ASTM 1449 Standard Guide for Industrial Laundering of Flame, Thermal, and Arc Resistant Clothing

²ASTM F 2757 Standard Guide for Home Laundering Care and Maintenance of Flame, Thermal and Arc Resistant Clothing

³CSA Z462 Workplace Electrical Safety

⁴NFPA 70E Standard for Electrical Safety in the Workplace

⁵NFPA 2112 Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire

⁶NFPA 2113 Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire